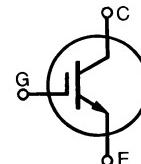
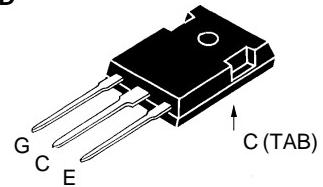
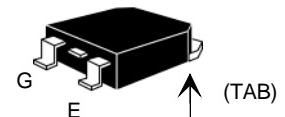


HiPerFAST™ IGBT**IXGH30N60B
IXGT30N60B**

V_{CES} = 600 V
 I_{C25} = 60 A
 $V_{CE(sat)}$ = 1.8 V
 t_{fi} = 100 ns



Symbol	Test Conditions	Maximum Ratings	
V_{CES}	T_J = 25°C to 150°C	600	V
V_{CGR}	T_J = 25°C to 150°C; $R_{GE} = 1 \text{ M}\Omega$	600	V
V_{GES}	Continuous	±20	V
V_{GEM}	Transient	±30	V
I_{C25}	T_c = 25°C	60	A
I_{C110}	T_c = 110°C	30	A
I_{CM}	T_c = 25°C, 1 ms	120	A
SSOA (RBSOA)	$V_{GE} = 15 \text{ V}$, $T_{VJ} = 125^\circ\text{C}$, $R_G = 33 \Omega$ Clamped inductive load, $L = 100 \mu\text{H}$	$I_{CM} = 60$ @ 0.8 V_{CES}	A
P_c	T_c = 25°C	200	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s		300	°C
M_d	Mounting torque (M3)	1.13/10 Nm/lb.in.	
Weight		6	g

TO-247 AD
(IXGH)TO-268 (D3)
(IXGT)

G = Gate, C = Collector,
E = Emitter, TAB = Collector

Features

- International standard packages JEDEC TO-268 surface mountable and JEDEC TO-247 AD
- High current handling capability
- Latest generation HDMOS™ process
- MOS Gate turn-on
 - drive simplicity

Applications

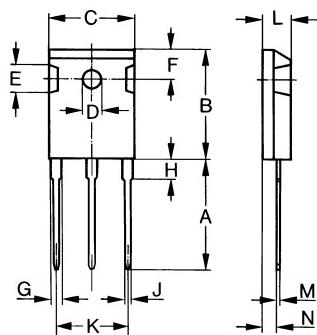
- AC motor speed control
- DC servo and robot drives
- DC choppers
- Uninterruptible power supplies (UPS)
- Switched-mode and resonant-mode power supplies

Advantages

- Space savings (two devices in one package)
- High power density
- Suitable for surface mounting
- Switching speed for high frequency applications
- Easy to mount with 1 screw, TO-247 (isolated mounting screw hole)

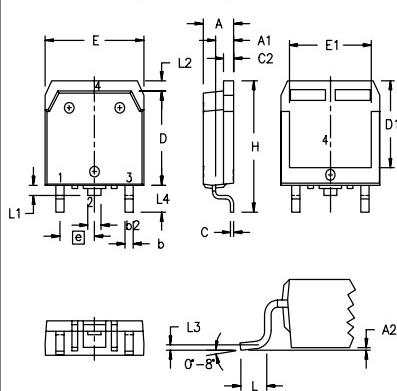
Symbol	Test Conditions	Characteristic Values		
		($T_J = 25^\circ\text{C}$, unless otherwise specified)	min.	typ.
BV_{CES}	$I_C = 250 \mu\text{A}$, $V_{GE} = 0 \text{ V}$ BV_{CES} temperature coefficient	600	0.072	V %/K
$V_{GE(th)}$	$I_C = 250 \mu\text{A}$, $V_{CE} = V_{GE}$ $V_{GE(th)}$ temperature coefficient	2.5	-0.286	V %/K
I_{CES}	$V_{CE} = 0.8 \cdot V_{CES}$ $V_{GE} = 0 \text{ V}$	$T_J = 25^\circ\text{C}$ $T_J = 150^\circ\text{C}$		200 μA 1 mA
I_{GES}	$V_{CE} = 0 \text{ V}$, $V_{GE} = \pm 20 \text{ V}$			±100 nA
$V_{CE(sat)}$	$I_C = I_{C110}$, $V_{GE} = 15 \text{ V}$			1.8 V
$V_{CE(sat)}$	$I_C = I_{C110}$, $V_{GE} = 15 \text{ V}$	$T_J = 150^\circ\text{C}$		2.0 V

Symbol	Test Conditions	Characteristic Values			
		($T_J = 25^\circ\text{C}$, unless otherwise specified)	min.	typ.	max.
g_{fs}	$I_C = I_{C110}$; $V_{CE} = 10\text{ V}$, Pulse test, $t \leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$		25	S	
C_{ies} C_{oes} C_{res}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$	2700		pF	
		190		pF	
		50		pF	
Q_g Q_{ge} Q_{gc}	$I_C = I_{C110}$, $V_{GE} = 15\text{ V}$, $V_{CE} = 0.5 V_{CES}$	125	150	nC	
		23	35	nC	
		50	75	nC	
$t_{d(on)}$ t_{ri} $t_{d(off)}$ t_{fi} E_{off}	Inductive load, $T_J = 25^\circ\text{C}$ $I_C = I_{C110}$, $V_{GE} = 15\text{ V}$, $L = 100\text{ }\mu\text{H}$, $V_{CE} = 0.8 V_{CES}$, $R_G = R_{off} = 4.7\Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8 \cdot V_{CES}$, higher T_J or increased R_G	25		ns	
		30		ns	
		130	220	ns	
		100	190	ns	
		1.3	2	mJ	
$t_{d(on)}$ t_{ri} E_{on} $t_{d(off)}$ E_{off}	Inductive load, $T_J = 150^\circ\text{C}$ $I_C = I_{C110}$, $V_{GE} = 15\text{ V}$, $L = 100\text{ }\mu\text{H}$, $V_{CE} = 0.8 V_{CES}$, $R_G = R_{off} = 4.7\Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8 \cdot V_{CES}$, higher T_J or increased R_G	25		ns	
		35		ns	
		0.3		mJ	
		200		ns	
		290		ns	
		3		mJ	
R_{thJC}				0.62	K/W
R_{thCK}	(IXGH30N60B)		0.25		K/W

TO-247 AD (IXGH) Outline

Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

IXBH30N60B characteristic curves are located in the IXBH30N60BU1 data sheet.

TO-268AA (D³ PAK)

Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	4.9	5.1	.193	.201
A ₁	2.7	2.9	.106	.114
A ₂	.02	.25	.001	.010
b	1.15	1.45	.045	.057
b ₂	1.9	2.1	.75	.83
C	.4	.65	.016	.026
D	13.80	14.00	.543	.551
E	15.85	16.05	.624	.632
E ₁	13.3	13.6	.524	.535
e	5.45 BSC		.215 BSC	
H	18.70	19.10	.736	.752
L	2.40	2.70	.094	.106
L1	1.20	1.40	.047	.055
L2	1.00	1.15	.039	.045
L3	0.25 BSC		.010 BSC	
L4	3.80	4.10	.150	.161

Min. Recommended Footprint